

Application No. 10/697,664
Amendment dated February 25, 2008
Reply to Office Action of August 24, 2007

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) An assembly comprising a plunger tip, a plunger rod, and a unitary adapter for cooperatively engaging a plunger tip and a plunger rod for forcing molten metal from a shot sleeve into a die of a die-casting apparatus, said adapter maintaining said plunger tip and said plunger rod in fixed relation to one another, and including comprising a distal end adapted to cooperatively engage the said plunger tip, an opposite proximal end adapted to cooperatively engage the said plunger rod, and a length between said distal end and said proximal end, said adapter being configured to maintain said distal end and said proximal end in fixed relationship with one another, said adapter having at least one passage extending from said proximal end to said distal end to permit the flow of coolant there through, said distal end of said adapter being open to form a portion of a cooling chamber and to permit the coolant to directly contact an interior surface of the said plunger tip that forms a portion of the said cooling chamber, said adapter being formed of a beryllium-copper alloy to facilitate the transfer of heat from the said plunger tip to the coolant passing through said passage of said adapter.
2. (currently amended) The assembly adapter of claim 1, wherein said at least one passage of said adapter is an axial bore.
3. (currently amended) The assembly adapter of claim 2, wherein said axial bore of said adapter is along a mid-longitudinal axis of said adapter.
4. (currently amended) The assembly adapter of claim 1, wherein said at least one passage of said adapter is generally uniform in cross section along the length of the said adapter.

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5. (currently amended) The assembly-adapter of claim 1, wherein said at least one passage of said adapter has an enlarged cross section adjacent said distal end of said adapter.
6. (currently amended) The assembly-adapter of claim 1, wherein said at least one passage of said adapter has a frusto-conical shape adjacent said distal end of ~~the~~said adapter to facilitate the flow of the coolant through said passage and to increase the size of ~~the~~said cooling chamber available to cool ~~the~~said plunger tip.
7. (currently amended) The assembly-adapter of claim 1, further comprising an o-ring between said adapter and ~~the~~said plunger tip and an o-ring between said adapter and ~~the~~said plunger rod.

Claims 8-22 (cancelled).

23. (currently amended) An assembly comprising a plunger tip, a plunger rod, and a unitary adapter for cooperatively engaging a plunger tip and a plunger rod for forcing molten metal from a shot sleeve into a die of a die-casting apparatus, said adapter maintaining said plunger tip and said plunger rod in fixed relation to one another, and including comprising a threaded distal end adapted to cooperatively engage ~~the~~said plunger tip, an opposite proximal end adapted to cooperatively engage ~~the~~said plunger rod, and a length between said distal end and said proximal end, said adapter being configured to maintain said distal end and said proximal end in fixed relationship with one another, said adapter having at least one passage extending from said proximal end to said distal end to permit the flow of coolant there through, said adapter being formed of a beryllium-copper alloy to facilitate the transfer of heat from ~~the~~said plunger tip to the coolant passing through said passage of said adapter.
24. (currently amended) The assembly-adapter of claim 23, wherein said at least one passage of said adapter is an axial bore.
25. (currently amended) The assembly-adapter of claim 24, wherein said axial bore

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- of said adapter is along a mid-longitudinal axis of said adapter.
26. (currently amended) The assembly-adapter of claim 23, wherein said at least one passage of said adapter is generally uniform in cross section along the length of ~~the~~said adapter.
27. (currently amended) The assembly-adapter of claim 23, wherein said at least one passage of said adapter has an enlarged cross section adjacent said distal end of said adapter.
28. (currently amended) The assembly-adapter of claim 23, wherein said at least one passage of said adapter has a frusto-conical shape adjacent said distal end of ~~the~~said adapter to facilitate the flow of the coolant through said passage and to increase the size of ~~the~~said cooling chamber available to cool ~~the~~said plunger tip.
29. (currently amended) The assembly-adapter of claim 23, further comprising an o-ring between said adapter and ~~the~~said plunger tip and an o-ring between said adapter and ~~the~~said plunger rod.
30. (currently amended) An assembly comprising a plunger tip, a plunger rod, and a unitary adapter for ~~cooperatively engaging a plunger tip and a plunger rod for~~ forcing molten metal from a shot sleeve into a die of a die-casting apparatus, said adapter maintaining said plunger tip and said plunger rod in fixed relation to one another, and including ~~comprising~~ a distal end adapted to cooperatively engage ~~the~~said plunger tip, an opposite proximal end adapted to cooperatively engage ~~the~~said plunger rod, and a length between said distal end and said proximal end, said adapter being configured to maintain said distal end and said proximal end in fixed relationship with one another, said adapter having at least one passage extending from said proximal end to said distal end to permit the flow of coolant there through, said adapter having a maximum cross-sectional dimension transverse to the length of said adapter, said distal end having a cross-sectional dimension transverse to the length of said adapter that is less

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- than said maximum cross-sectional dimension, said distal end having a generally cylindrical cross section along at least a portion of the length, said adapter being formed of a beryllium-copper alloy to facilitate the transfer of heat from ~~the~~said plunger tip to the coolant passing through said passage of said adapter.
31. (currently amended) The ~~assembly-adapter~~ of claim 30, wherein said at least one passage of said adapter is an axial bore.
32. (currently amended) The ~~assembly-adapter~~ of claim 31, wherein said axial bore of said adapter is along a mid-longitudinal axis of said adapter.
33. (currently amended) The ~~assembly-adapter~~ of claim 30, wherein said at least one passage of said adapter is generally uniform in cross section along the length of ~~the~~said adapter.
34. (currently amended) The ~~assembly-adapter~~ of claim 30, wherein said at least one passage of said adapter has an enlarged cross section adjacent said distal end of said adapter.
35. (currently amended) The ~~assembly-adapter~~ of claim 30, wherein said at least one passage of said adapter has a frusto-conical shape adjacent said distal end of ~~the~~said adapter to facilitate the flow of the coolant through said passage and to increase the size of ~~the~~said cooling chamber available to cool ~~the~~said plunger tip.
36. (currently amended) The ~~assembly-adapter~~ of claim 30, further comprising an o-ring between said adapter and ~~the~~said plunger tip and an o-ring between said adapter and ~~the~~said plunger rod.
37. (currently amended) The ~~assembly-adapter~~ of claim 1, wherein said adapter has a mid-longitudinal axis, ~~the~~said plunger tip has a mid-longitudinal axis, and ~~the~~said plunger rod has a mid-longitudinal axis, said adapter being configured to fixedly align the mid-longitudinal axis of said adapter with the mid-longitudinal axis of ~~the~~said plunger tip and the mid-longitudinal axis of ~~the~~said plunger rod.
38. (currently amended) The ~~assembly-adapter~~ of claim 23, wherein said adapter

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has a mid-longitudinal axis, ~~the~~said plunger tip has a mid-longitudinal axis, and ~~the~~said plunger rod has a mid-longitudinal axis, said adapter being configured to fixedly align the mid-longitudinal axis of said adapter with the mid-longitudinal axis of ~~the~~said plunger tip and the mid-longitudinal axis of ~~the~~said plunger rod.

39. (currently amended) The ~~assembly~~-adapter of claim 30, wherein said adapter has a mid-longitudinal axis, ~~the~~said plunger tip has a mid-longitudinal axis, and ~~the~~said plunger rod has a mid-longitudinal axis, said adapter being configured to fixedly align the mid-longitudinal axis of said adapter with the mid-longitudinal axis of ~~the~~said plunger tip and the mid-longitudinal axis of ~~the~~said plunger rod.

Claim 40-43 (cancelled).